



1 GEO_10- Developing a Community Profile Using Census Data

2 Subject Area

Geography

3 Suggested Level

Years 7-10

4 Key Statistical Literacy Competencies

- Data awareness
- The ability to understand statistical concepts
- The ability to analyse, interpret and evaluate statistical information
- Communicating statistical information and understandings

5 Overview

Geographers often collect and present information about a place and synthesise it to achieve an overview of its characteristics. This activity is designed to familiarise students with a local area using a range of census products. The Australian Bureau of Statistics undertakes the Census of Population and Housing every five years. The Census collects information about Australian households and provides social statistics for areas as large as Australia down to the Census Collection District of approximately 230 households.

This classroom activity is designed to develop geographical skills through the use of Census 2006 data to discover the social characteristics (persons, families and dwellings) of their local area. Supplemented by Google Earth, topographic maps and street directories, students are encouraged to learn more about where they live. The students are guided to present the social statistics that they collect from Census data in a variety of formats. Analysis of the material takes place in order to create a summary of the social characteristics of the area. For the examples shown below, selected statistics for the suburbs of Peppermint Grove (WA) and Footscray (Vic) have been used.

In rural areas, where population density is lower and there are fewer Collection Districts, teachers are advised to select a larger geographic unit to study.

The statistics provided by the Census data would also complement a fieldwork study either before or after the classroom activities.



6 Requirements

- Computer
- Internet connection
- Spreadsheet software program
- Calculator
- Worksheet

7 Instructions

Census data are being delivered in a number of new formats which are free online. Articles in Education News (cat.no 1330.0) for 2007 illustrate how to search for Census data.

The activity uses three of the Census products, namely **QuickStats**, **Census Tables** and **MapStats**. **QuickStats** provides summary data in tabular form, **MapStats** creates thematic maps from census data, and **Census Tables** provide detailed data as an Excel spreadsheet on a particular Census topic. For a very detailed investigation of an area a **Community Profile** may be of more use. All of these products are available for areas as large as Australia or as small as a Collection District (about 230 households) and a range of geographic units in between. All are free on the web.

The activity could be completed in small groups or individually. The activity develops a range of graphing styles, such as column, pie, compound column or bar graphs and population pyramids.

7.1 Create a Community Profile: What Does the Area Look Like?

Create a profile of a chosen suburb or locality. The profile should include the location and physical characteristics of the area in addition to its demographic and socio-economic characteristics.

1. Select a suitable area. Use a street directory, a topographic map, or the maps created from Census data to describe the location of the area, using appropriate geographic language and conventions.



2. Use a topographic map, or images from Google Earth to describe the natural or physical characteristics of the chosen area.

7.2 Using 2006 Census QuickStats: How Does the Area Compare with Benchmark Australian Values?

Go to www.abs.gov.au/census to access **QuickStats** for the chosen area. From the QuickStats table choose statistics about persons, families and dwellings to provide a picture of the area. Note the benchmark Australian values for comparison. Some statistics are provided in Table 1 as an example.

1. A map of the chosen district is generated when accessing Census data. Use the line scale on this map to estimate the area of the district being studied.
2. Obtain the population of the chosen area from the **QuickStats** table. Use the population and the area in km² to calculate the approximate population density of the locality in persons per square kilometre. The following formula will be useful:

Population density = Number of People / Area of land (square kilometres)

3. Australia's population density at 30 June 2006 was 2.7 people per square kilometre ([Yearbook Australia, 2008](#) (cat. no. 1301.0)). How does the population density of the chosen area compare with that of Australia?
4. Use the summary data provided in **QuickStats** (see example in Table 1) to create graphs to represent the selected statistics about persons, families and dwellings. Make comparisons with Australian statistics by creating similar graphs for the benchmark Australian values provided. Explore a range of presentation options such as tables, column graphs or bar charts.

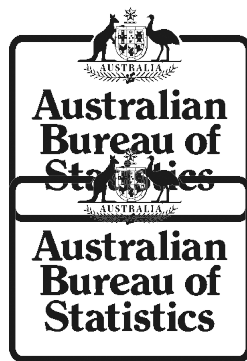


TABLE 1. A SELECTION OF 2006 CENSUS QUICKSTATS FOR AUSTRALIA AND THE SUBURBS OF PEPPERMINT GROVE, WA AND FOOTSCRAY, VICTORIA.				
		Australia	Peppermint Grove, WA	Footscray, Vic.
Quickstats				
Persons:	Total persons	19,855,288	1,580	11,401
	Population aged 0-4 years	6.3%	3.3%	5.4%
	Population aged 5-14 years	13.5%	17.9%	7.6%
	Population 65 years and over	13.3%	13.4%	12.5%
	Australian Citizenship	86.1%	85.9%	66.9%
Country of Birth (Main responses in selected region)	Australia	70.9%	70.9%	39.6%
	England	4.3%	6.9%	
	South Africa	0.5%	1.8%	
	Singapore	0.2%	1.7%	
	Scotland	0.7%	1.3%	
	Viet Nam	0.8%		11.4%
	China	1.0%		5.5%
	India	0.7%		5.5%
	Bangladesh	0.1%		2.6%

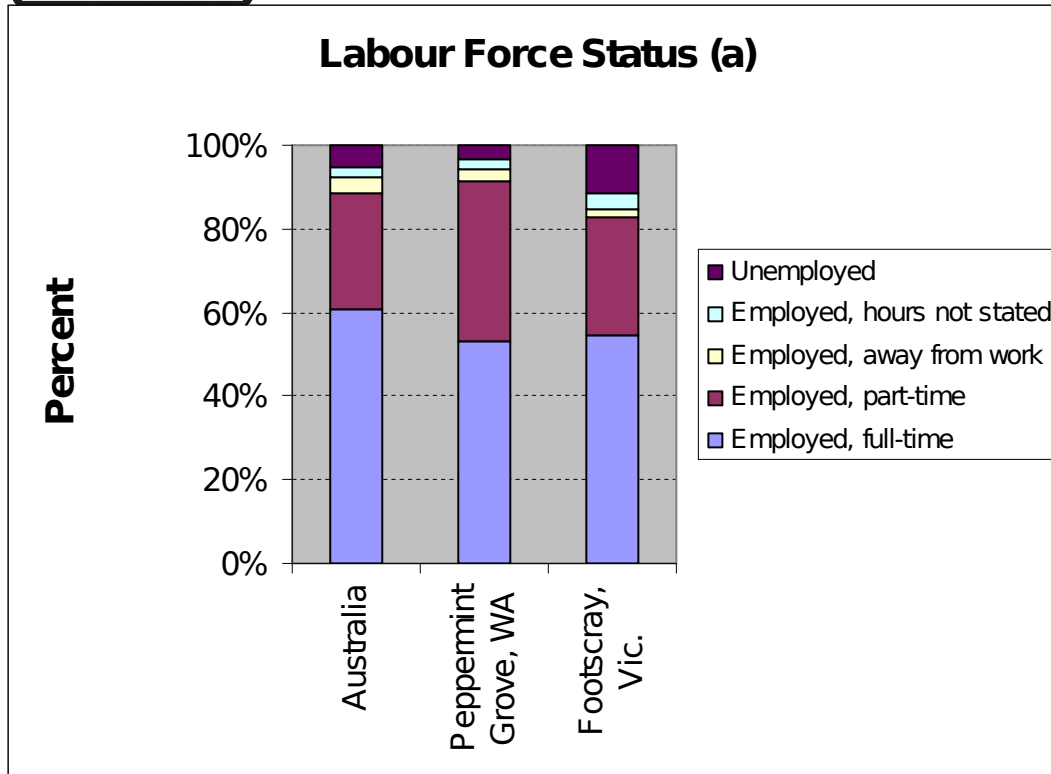


Occupation (Employed persons aged 15 years and over) Top two categories only	Professionals	19.8%	36.1%	23.8%
	Managers	13.2%	26.7%	
	Clerical and Administrative Workers	15%		14.2%
Income	Median Household Income	\$1027	\$2550	\$753
Family Characteristics :	Couple families with children	45.3%	55%	34.3%
	Couple families without children	37.2%	35.3%	38.45%
	One parent families	15.8%	8.%	21.6%
Dwelling Characteristics :	Separate House	74.8%	75.8%	52.7%
	Flat, unit or apartment	14.2%	11.7%	32.7%

Source: 2006, Census QuickStats, available at www.abs.gov.au/census

- Explore the concept of median income by asking students to define the term median and explain why median income is used in preference to mean income in the **QuickStats** tables.
- Develop the range of graphing types by asking students to present the labour force statistics for the chosen area as either a pie graph or as a compound column graph as shown in Figure 1.

FIGURE 1: COMPOUND COLUMN GRAPH COMPARING LABOUR FORCE STATISTICS



Source: 2006, Census QuickStats, available at www.abs.gov.au/census

7.3 Using 2006 Census Tables: What does a Population Profile of the Area Look Like?

Census Tables provide detailed statistics for a location which may be downloaded as an Excel spreadsheet. Download the Census Table showing the age and sex of the population in the chosen local area.

1. Simplify the table to present the age and sex of the population in 5 year intervals, as shown in Table 2. Represent these statistics as a percentage of the total population of the area as shown in Table 2, (not required if completing an interactive population pyramid).

Table 2: AGE AND SEX, STATE SUBURB, PEPPERMINT GROVE, WA

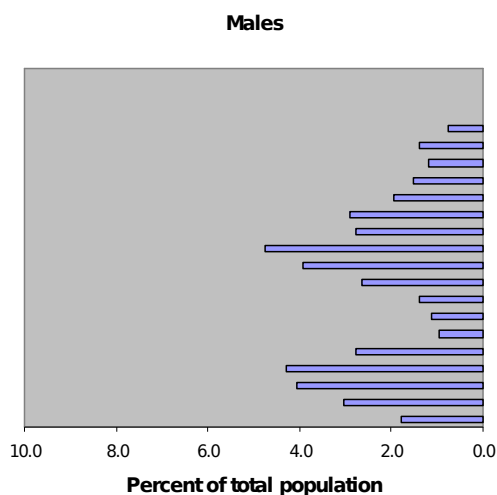
Age	Males		Females		Persons
	Number	Percent	Number	Percent	
0-4 years	28	1.8	25	1.6	53
5-9 years	48	3.0	55	3.5	103
10-14 years	64	4.0	117	7.4	181
15-19 years	68	4.3	151	9.6	219
20-24 years	44	2.8	67	4.2	111
25-29 years	15	0.9	28	1.8	43
30-34 years	18	1.1	23	1.5	41
35-39 years	22	1.4	37	2.3	59
40-44 years	42	2.7	50	3.2	92
45-49 years	62	3.9	71	4.5	133
50-54 years	75	4.7	70	4.4	145
55-59 years	44	2.8	56	3.5	100
60-64 years	46	2.9	38	2.4	84
65-69 years	31	2.0	29	1.8	60
70-74 years	24	1.5	21	1.3	45
75-79 years	19	1.2	20	1.3	39
80-84 years	22	1.4	21	1.3	43
85-89 years	12	0.8	11	0.7	23
90-94 years	0	0.0	7	0.4	7
95-99 years	0	0.0	0	0.0	0
100 years and over	0	0.0	0	0.0	0
Total	684	43.3	897	56.7	1,581

Source: 2006 Census QuickStats Available at www.abs.gov.au/census

- Construct a population pyramid for the locality. This may be done using the interactive population pyramid provided with this activity or the paper version (See Geo_10 attachment) The vertical axis represents the percentage of the population in each 5 year age group and on the horizontal axis males are represented to the left and females to the right
- Describe the shape of the population pyramid for the chosen location. Use the following guidelines to structure the description: width of base, width of top, shape of the sides, height of the graph, proportion of males and females. Accompany the description with statistics taken from the population pyramid.
- What explanations may be given for the shape of the population pyramid in Peppermint Grove?



Figure 2: POPULATION PYRAMID FOR THE STATE SUBURB OF PEPPERMINT GROVE, WA



7.4 Using 2006 Census MapStats: What Spatial Patterns Exist within the Area?

The Census product **MapStats** provides thematic maps of a district. Topics include age and population distribution, ancestry, birthplace, childcare, children, cultural and language diversity, educational attainment, employment, family formation and dissolution, hours worked, household characteristics, housing costs, income, indigenous population size and distribution, labour force participation, language, living arrangements, migrants, migration, occupation, people with a disability, school education, transport access and use, unpaid household work and voluntary work.

Go to www.abs.gov.au/census and select the **MapStats** product for Census 2006.

- 1.** Select two **MapStats** topics which enhance the information about the demographic and socio-economic characteristics of the locality and create maps using **MapStats**.
- 2.** Create two maps of the community using **MapStats**. Obtain as much detail by downloading a map showing the smallest geographic area e.g. Collection District.
- 3.** For each map describe the distribution of the characteristics chosen. This should be done by using the following guidelines and supporting the description with statistics extracted from the map.



- Is the pattern even or uneven?

- Where are most?
- Where are least?
- Are there exceptions?

4. Compare the distributions shown by the two maps generated above.

7.5 Putting the Profile Together

Use the **Quickstats**, **Census Tables** and **MapStats** to describe the characteristics of the area.

1. Describe the demographic and socio-economic characteristics of the area to develop a profile of the community.
2. This activity could be extended so that students share their written descriptions with another student. Ask students to review their peer's work and ask them to answer these questions: Is the account well organised? How well does it create a picture of the locality? Does the account include sufficient statistics? How would you improve this piece of writing?
3. Working in groups, create a digital video to represent the local area and community. Integrate visual images of the district with graphic material to provide a picture of the local area.

8 Extension

Use Google Earth and a map of the chosen area.

1. What information is shown on a map but is not present on the satellite image?
2. What information is shown on a satellite image but not on the map?
3. Make an annotated map of the area. Identify where the main natural features are e.g. high ground, low lying areas, rivers and creeks, parkland and forest. Add the main man made infrastructure features such as railway lines and main roads. Some of these features may be overlain digitally if the school has electronic resources to use with spatial technologies.
4. Ask students to use their knowledge of the area and the thematic maps generated with **MapStats**, to answer the following question: Do physical characteristics help determine the spatial patterns within the chosen area?



A response of this nature requires an engaging introduction, a body composed of paragraphs structured using PEER, and a conclusion which summarises the findings and answers the question set. PEER may help students to structure each paragraph.

PEER stands for;

P- Make a point

E- Explain the point and expand on it

E- Examples should be provided using statistics where appropriate

R- Relate the paragraph to the question

9 Glossary

Mean

The mean is the sum of all the observation values divided by the number of observations. It is also known as the arithmetic average.

Statistics

(construed as sing.) The science which deals with the collection, classification, and use of numerical facts or data, bearing on a subject or matter;

(construed as plural) The numerical facts or data themselves.

10 References

(Note: Links to ABS publications are to the most recent release. Previous releases can be accessed by selecting the 'Past & Future Releases' tab.)

Australian Yearbook 2008,

<http://www.abs.gov.au/AUSSTATS/abs@.nsf/ProductsbyCatalogue/B995EE21BC6844BFCA25728E0014D682?OpenDocument>

Census of Population and Housing, 2006, www.abs.gov.au/census

11 Feedback

To provide any feedback regarding this activity, please contact ABS Education Services on 1800 623 273 or email education@abs.gov.au.

